

## THE BIOLOGY OF NORTH-WEST ISLET, CAPRICORN GROUP.

## (D.). MARINE MOLLUSCS.

By TOM IREDALE.

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## Plate xxxv.

The Marine Mollusca of the Capricorn Group were catalogued by Hedley (1906-1907), where an account of Masthead Reef as a collecting ground is given based on the results of the expedition which stayed there on October 23-31, 1904.

Four hundred and forty-seven species were listed, while more than one hundred were left undetermined. Of these listed no fewer than fifty-five were described as new to science, while one hundred and twenty-three were additions to the Australian Molluscan fauna.

The hundred left unworked have been utilised since in connection with other collections, and in 1909 Hedley described *Cuna capillacea* (p. 425, pl. xxxvi., figs. 9-10), *Arcopagia dapsilis* (p. 434, pl. xxxvii., fig. 33), *Triphora tribulationis* (p. 440, pl. xl., figs. 53-54), *Odostomia chorea* (p. 445, pl. xli., fig. 66), *Odostomia sperabilis* (p. 448, pl. xli., fig. 71), *Marginella anxia* (p. 452, pl. xliii., figs. 86-87), *Mangelia anxia* (pl. 455, pl. xliii., fig. 89), *Mangelia naufraga* (p. 458, pl. xliv., figs. 93-95), and *Retusa pharetra* (p. 464, pl. xlv., fig. 102), from the Hope Islands, noting that he had previously obtained these species at the Capricorn Group. In 1905 (2) Hedley had noted named species from the group, and in 1908 he amended some identifications. Describing as new *Chione capricornea* (p. 475, pl. ix., figs. 24-25).

In 1912 another new species was described, *Couthouyia aspera* (p. 141, pl. xli., fig. 18).

In 1919 *Tonna cerevisina* Hedley was noted; in 1921 *Tridacna maxima* var. *fossor* was introduced by Hedley, the type being from Masthead Islet.

In 1922 Hedley revised the Australian Turridae and some twenty odd species were localised as from Masthead Reef, five of these being described as new, others already recorded being listed with more accurate names. The species recorded may be here noted:—

*Turris marmorata* Lam. (p. 215), *Asthenotoma subtilinea* Hedley (p. 219), *Inquisitor mastersi* Brazier (p. 243), *Lienardia lutea* Pease (p. 289), *L. mighelsi* Ire. & Tomlin (p. 289), *L. strombilla* Hervier (p. 294), *L. vultuosa* Reeve (p. 294), *Heterocithara hirsuta* Folin (p. 298), *H. zebuensis* Reeve (p. 300), *Anacithara brevicostata* Hed. type (p. 301), *A. conata* Hed. (p. 301), *A. exquisita* Hed. type (p. 301), *A. naufraga* Hed. (p. 304), *A. stricta* Hed. type (p. 304), *Pseudoraphitoma informis* Hed. (p. 310), *Daphnella marmorata* Hed. (p. 328), *Veprecula vacillata* Hed. (p. 330), *Hemidaphne cyclophora* Desh. (p. 332), *Exomilus anxius* Hed. (p. 333), *Nepotilla tropicalis* Hed. type (p. 337), *Asper-*

*daphne capricornea* Hed. type (p. 340), *Pseudodaphnella barnardi* Braz. (p. 343), *Eucyclotoma carimulata* Souv. (p. 355).

Shirley (1915) listed a small series of shells collected on North-west Island by Miss Peberdy, apparently the first named from that islet. The names used by Shirley differ in many cases from those given by Hedley, and his determinations are not to be trusted. I therefore give his short list as published: *Atactodea striata* Gmelin, *Trochus calcaratus* Sow., *Chrysostoma paradoxa* Born, *Quoyia decollata* Q. & G., *Cerithium columna* Sby., *C. hanleyi* Sby., *C. rubum* Martyn, *C. granosum* Kiener, *Clava aspera* L., *C. vertaga* L., *Natica chinensis* Lam., *Cypraea isabella* L., *C. annulus* L., *C. caurica* L., *C. erronea* L., *Conus spectrum* L., and *Arcularia jonasi* Dunk (= *nana* A. Ad.).

Mr. G. P. Whitley made a small collection at North-west Island and a few were picked up at Wilson Islet. These were mostly common Queensland species, but here again a few of interest can be noted and they may be useful hereafter in connection with more material. A *Pinna* near *menkei* Reeve, a *Turbo* of the *foliaceus* group, *Haliotis ovina* Gmel., and some nudibranchs call for notice.

Hedley had made a collection of cuttle fish bones and these he recorded as *Sepia esculenta* Hoyle, *S. cultrata* Hoyle, *S. pfefferi* Hoyle, leaving another undetermined. I studied these in connection with the Sydney ones reported upon in the last number of this Journal, and, as they appeared to be of great interest, I asked Whitley, who had helped me in connection with the Sydney ones, to pay especial attention to these. My request was complied with, though they were not found plentifully, and eight species were brought back. I am describing these in this place.

#### SOLITOSEPIA SUBMESTUS n.sp.

Plate xxxv., fig. 3, 4.

Shell smaller than average *S. mestus*, narrower, more elongate, inner cone more strongly marked, the outer cone passing ventrally in front of the spine and showing a depression which is filled with chitin; the dorsal surface flatter and the ray sculpture more defined.

Dimensions: 68 x 24 mm. Type: Masthead I.

#### SOLITOSEPIA ROZELLA PEREGRINA n.subsp.

Shell smaller, shorter and comparatively broader, the inner cone wider, the rose colour restricted to a narrow band; the dorsal sculpture more pronounced than in the typical form.

Dimensions: 89 x 34 mm. Type: North-west I.

#### SOLITOSEPIA PLANGON ADHAESA n.subsp.

Shell narrower, more elongate, the inner cone more strongly developed, the outer cone advancing in front of the spine as a chitinous rim; the dorsal sculpture more pronounced and the dorsal surface more flattened than in the typical form.

Dimensions: 88 x 26 mm. Type: North-west I.

Remarks: These three forms, representing species of the Sydney fauna, may show greater differences when the animals are examined. The last named was the species recorded by Hedley as *S. cultrata* Hoyle in error.

#### GLYPTOSEPIA OPIPARA Ire.

This species was described from Masthead Island, but Whitley did not find it as abundant as Hedley did.

## ACANTHOSEPION WHITLEYANUM Ire.

This species was found at North-west Island, as it is the only member of the tropical forms of *Sepia* which has so far been found as far south as Sydney. From shell characters it appears nearest to the type of *Acanthosepion*, and the offshoots mentioned in my former essay may be here indicated.

## ACANTHOSEPION ELLIPTICUM ADJACENS n.subsp.

Plate xxxv., fig. 5, 6.

Shell larger than *S. elliptica* Hoyle (Chall. Reports Zool., Vol. xvi., p. 131, pl. xix., figs. 14, 24), from the Arafura Sea, with the anterior (ventral) wall of the inner cone more pronounced, the unstriated area of less extent, the dorsal sculpture much less marked; spine rounded, delicate, recurved.

Dimensions: 105 x 46 mm. Type: North-west I.

Remarks: The group to which this form belongs may be differentiated subgenerically with the name *Fiscisepia*, the present form being taken as the type.

## Genus PONDERISEPIA nov.

Shell very large, crass, back rounded, coarsely pustulose, spine very thick, rounded, short, ventral surface much swollen.

Type: *P. eclogaria*, infra.

## PONDERISEPIA ECLOGARIA n.sp.

Plate xxxv., fig. 7, 8.

Shell very large, elongately oval, more than twice as long as broad.

Dorsal surface well rounded, creamy white, darker laterally, very coarsely pustulose throughout, a narrow chitinous edge present, which vanishes posteriorly; outer cone strongly calcified.

Ventral surface swollen post-medially with a shallow median sulcus: the striae of the striated area very close together. Spine very short, thick, rounded. Inner cone well developed, lengthened, not produced ventrally as a ledge.

Dimensions: 326 x 128 mm. Type: Masthead Island (coll. Hedley).

Remarks: The type specimen was recorded as *Sepia esculenta* Hoyle, but specimens of that species prove very different and referable to *Acanthosepion*. Naef has proposed a subgenus *Platysepia* for the species *S. esculenta*, which name may be used subgenerically. The present species appears to be closely allied to *S. hercules* Pilsbry, and specimens of the same group are in this Museum from Fiji, and New Hebrides, while Mr. A. F. Basset Hull has collected it for me at New Caledonia, as well as in North Queensland.

## Genus CRUMENASEPIA nov.

Shell of medium size, elongately oval, definitely distinguished by the development of the inner cone ventrally into a chitinous pocket.

Type: *C. hulliana*, infra.

## CRUMENASEPIA HULLIANA n.sp.

Plate xxxv., fig. 1, 2.

Shell medium, elongately oval.

Dorsal surface rounded, finely pustulose, creamy, darker laterally: three raised rib-like rays can be distinguished, the median one rounded, rather notable, though not a great deal raised, the lateral ones obsolete outer cone weakly calcified but pustules more prominent, whitish; a large chitinous margin along the dorsal surface and extending round the outer cone. Ventral surface not

much swollen anteriorly, a very shallow median depression. Spine short, crass, almost separated ventrally by chitinous margin, strongly calcified dorsally. Inner cone well developed, extending ventrally across and forming a large deep pocket of chitinous matter which is concave externally.

Dimensions: 180 x 65 mm. Type: Howick Island, North Queensland.

Remarks: This represents a well marked group of which two or three species have been described as *Sepia singalensis* Goodrich from Ceylon, *S. koettlitzii* Hoyle & Standen from Somaliland and probably *S. zanzibarica* Pfeffer from Zanzibar. Dr. Paradise collected it at the Pellew Group, Gulf of Carpentaria, so that it has a wide range, extending to the southern limit of the Great Barrier Reef.

*METASEPIA PFEFFERI LAXIOR* subsp. n.

Plate xxxv., fig. 9, 10.

Hedley collected three shells of graded size which he determined as Hoyle's *S. pfefferi* (Chall. Rep. Vol. XVI., 1886, p. 145, pl. xxi., figs. 1-10) described from a female specimen dredged in the Arafura Sea. The shell fairly agrees with Hoyle's account, but as the Masthead specimens all agree in being comparatively broader, I designate them as above. Hoyle's type was a female, measuring 45 x 24, while Hedley's shells measure 51 x 32, 36 x 24, 27 x 16. Hoyle definitely stated no spine was present, but in the largest specimen there is a calcification, unfortunately broken, which suggests a spine formation.

Order LORICATA.

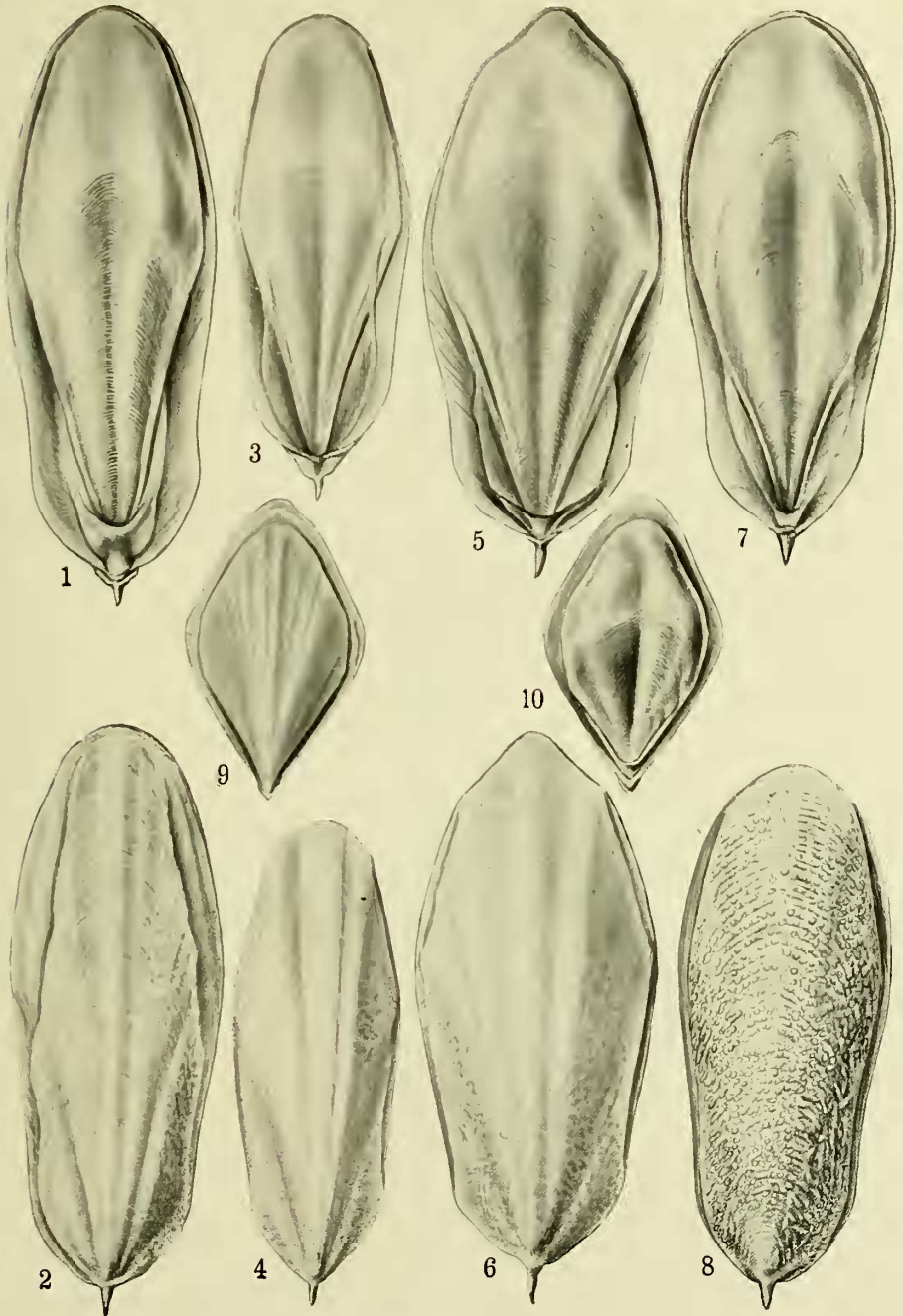
Hedley recorded *Callistochiton antiquus* Reeve, *Cryptoplax burrowi* Smith and *Acanthopleura spiniger* Sowerby. Later Ashby added *Acanthochiton shirleyi*.

In the Monograph of Australian Loricates appearing in this Periodical, Iredale and Hull described the firstnamed as a new species, *Callistelasma generos* and added two other new species which had been dredged by Hedley, viz.: *Parachiton capricornicus* and *Icoplax luminosa*. *Lophochiton granifer* Hull was recorded from this locality, and *Lucilina shirleyi* Ire. also lives there. The *Cryptoplax* proved to be *larvaeformis* Burrow, not *burrowi* Smith. Thus a faunula of eight species is known, but probably more occur, though none, save the rock living *Amphitomura gemmata* Blainville (= *Acanthopleura spiniger* Sow., Hedley) is common.

EXPLANATION OF PLATE XXXV.

- Fig. 1. *Crumenasepia hulliana* Iredale, ventral view.  
 2. *Crumenasepia hulliana* Iredale, dorsal view.  
 3. *Solitosepia submestus* Iredale, ventral view.  
 4. *Solitosepia submestus* Iredale, dorsal view.  
 5. *Acanthosepion ellipticum adjaceus* Iredale, ventral view.  
 6. *Acanthosepion ellipticum adjaceus* Iredale, dorsal view.  
 7. *Ponderisepia eclogaria* Iredale, ventral view.  
 8. *Ponderisepia eclogaria* Iredale, dorsal view.  
 9. *Metasepia pfefferi laxior* Iredale, dorsal view.  
 10. *Metasepia pfefferi laxior* Iredale, ventral view.

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CUTTLE-FISH BONES.

Drawn by Joyce K. Allan.